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ABSTRACT

Designed to research and document whether monies spent on vocational training produce benefits for the recipients, this study involved a population of 857 Montana high school graduates of the classes of 1970 and 1971 who were between twenty-three and twenty-five years old at the time of the survey and who had been employed in Montana during at least a two-year period since their graduation. Their education/training divided them into three groups: (1) postsecondary vocational (PSV), (2) secondary vocational (SV), and (3) academic/general (AG). The focuses of the study were (1) graduates' perceptions of their training, (2) employers' perceptions of graduates' training, and (3) comparisons of graduates' perceptions of quality of life. Each of the three focuses was assigned variables to accumulate data for comparative analyses, the data being collected through telephone interviews, employer surveys, and mailout questionnaires. The data analyses showed that PSV graduates more than SV or AG graduates were satisfied with their vocational training, possessed attitudinal qualities employers seek in their employees, had a tendency toward feelings of depression, etc. Both PSV graduates and SV graduates appeared characterized by low esteem for academic programs and attaining higher incomes than AGs during the first five years following graduation, whereas AGs had higher esteem for academic programs and had more reliance on internal control of self. (Appended are the study instruments and documentation of study findings.) (VB)

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ED156909

A COMPARISON STUDY OF THE BENEFITS OF SECONDARY AND POSTSECONDARY VOCATIONAL EDUCATION

Conducted for

Office of the Superintendent
of Public Instruction
Helena, Montana

by

Northwest Regional Educational Laboratory
710 S.W. Second Avenue
Portland, Oregon 97204

January 1978

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U.S. DEPARTMENT OF HEALTH
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I. EXECUTIVE SUMMARY

At the request of the Montana Office of the State Superintendant of Public Instruction this study was conducted to research and document whether monies spent on vocational training produce benefits for the recipients of the training. The study had three focii:

A. Graduates' perceptions of their training

B. Employers' perceptions of graduates' training

C. Comparisons of graduates' perceptions of quality of life

Each of the three focii were assigned study variables which would accumulate data for comparative analyses among three study groups of Montana graduates: postsecondary vocational, secondary vocational and academic/general.

Three methods were used to collect data: telephone interviews, employers surveys and mailout questionnaires. A stratified random sample yielded a study population of 857 Montana high school graduates of the classes of 1970 and 1971 who were between 23 and 25 years of age at the time of the survey and who had been employed in Montana during at least a two-year period since their graduation.

Analyses of the data suggest that the following statements appear to characterize postsecondary vocational graduates more than secondary vocational graduates or academic/general graduates:

1. Satisfaction with their vocational training
2. Employability and employment success after graduation
3. Having their training held in high regard by employers
4. Possessing attitudinal qualities employers seek in their employees

5. Feeling free to interact with management

6. Tendency toward feelings of depression

7. Reliance on external rather than internal control of self

Analysis of the data suggests that both postsecondary vocational graduates and vocational graduates appear to be characterized by:

1. Low esteem for academic programs

2. Needing more experience during their training

3. Needing more interpersonal and management training in their vocational programs

4. Less and shorter periods of unemployment than academic/general graduates

5. Higher incomes than academic/general graduates during the first five years following graduation

6. Better feelings about the economic aspects of their jobs than academic/general graduates

Compared to postsecondary vocational and secondary vocational graduates, academic/general graduates tend to be characterized by:

1. Higher esteem for academic programs

2. Better communication with fellow employees, excluding management

3. Better feelings about the psychological aspects of their jobs

4. More concern about physical health

5. More reliance on internal control of self

6. Having fewer feelings of boredom

II. BACKGROUND AND PURPOSES OF THE STUDY

Rationale for the Study

The Montana Office of the State Superintendent of Public Instruction (OSPI) requested this study. The state of Montana recognizes the need to research and document whether monies spent on vocational training produce benefits for the recipients of the training. The U. S. Office of Education is asking states the same kind of question. The Rules and Regulations for preparation of state plans for vocational education require that vocational programs be evaluated in terms of:

- "Quality and availability of instructional offerings ...
- Student achievement as measured, for example, by:
  (1) Standard occupational proficiency measures
  (2) Criterion referenced tests; and
  (3) Other examinations of students' skills, knowledge, attitudes and readiness for entering employment successfully
- Results of student employment success as measured, for example, by:
  (1) Rates of employment and unemployment
  (2) Wage rates
  (3) Duration of employment; and
  (4) Employer satisfaction with performance of vocational education students as compared with performance of persons who have not had vocational education"[1]

Purposes of the Study

This study supplements, rather than duplicates, the state level evaluations of vocational programs conducted under the

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[1]Department of Health, Education and Welfare, Office of Education, Rules and Regulations to implement the Vocational Education Act Amendments of 1976, Federal Register, Vol. 42, No. 191; Monday, October 3, 1977, Section 104.402, Page 53842.

Montana State Plan for Vocational Education. Accordingly, the OSPI has assigned some specific purposes to this study, based on the premise that there are benefits for the recipients of secondary and postsecondary vocational training. These purposes constitute the three focii of the study:

Purpose A: Graduates' perceptions of their training -- to analyze a sample of Montana secondary and postsecondary graduates' perceptions of the worth and quality of their vocational training.

Purpose B: Employers' assessments of graduates' training -- to analyze a sample of Montana employers' assessments of the quality of secondary and postsecondary vocational training of Montana graduates.

Purpose C: Comparison of perceptions of quality of life -- to describe similarities and differences in a sample of Montana vocational education and nonvocational education graduates' perceptions of their current quality of life. In this study "quality of life" variables are grouped under three classifications: economic, sociological and psychological.

Related Research

The importance of this type of study is justified in the findings of prior research. Research to date has surfaced some of the challenges vocational education has encountered in terms of providing benefits to the recipients of training:

Economic benefits

> "The first (goal) is equipping all persons for earning a living. Concurrent with the first goal is the second of preparing skilled workers for available jobs. The third, preparing

persons to live life more fully, has been secondary to the other two goals...."[2]

Sociological benefits

"Man is a social being. He needs to feel that he is accepted in a group and that he has the capacity and ability to contribute to others in the solution of problems of society. ... Vocational education is challenged in terms of developing appropriate attitudes and...its contributions and relationship to other aspects of living."[3]

Psychological benefits

"A nation which has been known and criticized for its materialistic values is now asking itself whether in fact the good life can be measured in terms of consumer goods, and those who presume to define the national goals increasingly speak of quality of life rather than of further material possessions. ... The implication is typically given that the nation must change from its fixation on goals which are basically economic to goals which are essentially psychological, from a concentration on being well-off to a concern with a sense of well-being."[4]

Prior research has also addressed some of the apparent positive and negative aspects of vocational training in terms of the benefits to recipients of the training. Some positive indications are:

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[2]Cross, Aleene A., Developing the Nation's Work Force, Yearbook V; Merle E. Strong, editor; American Vocational Association, 1510 H Street, NW, Washington, D. C. 20005; 1975.

[3]Bender, Ralph E., The Individual and His Education, Yearbook II; Alfred H. Krebs, editor; American Vocational Association, 1510 H Street, NW, Washington, D. C. 20005; 1972.

[4]Campbell, Angus, and Philip E. Converse, The Quality of American Life; Russell Sage Foundation, 230 Park Avenue, New York, New York 10017; 1976.

1. Among graduates of high school vocational programs unemployment rates seem to be lower and wages higher than among noncollege-bound youth who complete high school without vocational training.[5]

2. Vocational high school graduates appear to have more occupational adaptability than academic graduates since they are more likely to migrate out of depressed areas.[6]

3. Cost-effectiveness studies indicate that community colleges are more efficient than other postsecondary vocational-technical agencies or vocational high schools in terms of the occupations and earnings of their graduates.[7]

Negative indications relative to vocational training also appear in research reports:

1. Vocational training in the schools is likely to continue to be obsolescent in equipment and training and irrelevant to employment needs.[8]

2. The advantages for vocational education graduates may be due more to their credentials, basic education and "creaming" processes than to the acquisition of any specific technical skill.[9]

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[5] U. S. Department of Labor, Manpower Report to the President; Government Printing Office, Washington D. C.; 1971.

[6] Operations Research, Inc., Report of the Analysis Group for U. S. Department of Health, Education and Welfare Review Task Force; September 25, 1970.

[7] Somers, Gerald G. and Susan B. Fernbach, An Analysis of the Economic Benefits of Vocational Education at the Secondary, Post-Secondary Junior College Levels: A Preliminary Report on an Evaluation of the Effectiveness of Vocational and Technical Education in the U. S.; Center for Studies in Vocational and Technical Education, University of Wisconsin, Madison, Wisconsin; 1970.

[8] U. S. Department of Health, Education and Welfare, National Panel on High School and Adolescent Education; Report of a Special Task Force on The Education of Adolescents; Government Printing Office, No. OE 76-00004; 1976.

[9] Rogers, David, "Vocational and Career Education," Report to the National Panel on High Schools and Adolescent Education (working paper), Graduate School of Business Administration, New York University, New York, New York; 1972.

3. A large percentage of the respondents used most frequently the skills found in the areas of mathematics, business education, language arts, home economics and industrial arts, (but) as teenagers they had understood the educational requirements of a job and their own abilities and interests "only slightly well" or "not well at all." [10]

This study contributes to the body of research on vocational education in terms of insights gained in pursuing the study's three purposes:

1. Analyzing graduates' perceptions of training.
2. Analyzing employers' assessments of graduates' training.
3. Comparing perceptions of quality of life held by vocational education graduates with those held by nonvocational education graduates.

Nature of the Study

This study is in the form of descriptive research. The purpose of descriptive research is to describe systematically the facts and characteristics of a given population or area of interest, factually and accurately. Essentially, descriptive research has the same purposes as survey studies:

"a. To collect detailed factual information that describes existing phenomena

b. To identify problems or justify current conditions and practices

c. To make comparisons and evaluations

d. To determine what others are doing with similar problems or situations and benefit from their experience in making future plans and decisions." [11]

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[10] Flanagan, John C. and Darlene Russ-Eft, An Empirical Study to Aid in Formulating Educational Goals; American Institute for Research, P.O. Box 1113, Palo Alto, Cal. 94302; June 1975.

[11] Van Dalen, D. B., and W. J. Meyer, Understanding Educational Research, McGraw-Hill, New York, 1966 (Rev.).

Organization of This Study Report

The next section, Section III of this report, describes the Study Methodology. Section IV, Study Findings, and Section V, Summary and Conclusions, focus on the study's three purposes, presenting the results and conclusions relative to each variable that was examined under each purpose.

III. METHODOLOGY

Study Variables

For each of the three purposes of the study, variables were identified which, given the responses relative to the variables by persons in the study population, would accumulate data for analysis. The criteria for selection of variables were:

1. To permit discrimination among groups in the study population on those dimensions capable of comparative analysis.
2. To illuminate or illustrate certain phenomena on those dimensions capable of descriptive analysis.

The three purposes of the study and the study variables for each are listed below:

Purpose A: Graduates' perceptions of their training -- to analyze a sample of Montana secondary and postsecondary graduates' perceptions of the worth and quality of their vocational training.

Variable A.1 -- Vocational graduates' ratings of their vocational education

Variable A.2 -- Relationships between vocational education and employment

Variable A.3 -- Graduates' assessments of their academic instruction

Variable A.4 -- Graduates' assessments of the contribution education has made to their lives today

Variable A.5 -- Graduates' assessments of their student guidance/counseling

Purpose B: Employers' assessments of graduates' training -- to analyze a sample of Montana employers' assessments of the quality of secondary and postsecondary vocational training of Montana graduates.

Variable B.1 -- How employees are obtained

Variable B.2 -- Recruiting practices

Variable B.3 -- Employers' ratings of quality of vocational education of graduates of Montana vocational/technical centers

Variable B.4 -- Employers' ratings of quality of high school vocational education programs

Variable B.5 -- Employers' ratings of high school graduates who have not had vocational training

Variable B.6 -- Employers' perceptions of graduates' attitudes

Variable B.7 -- Extent of employers' preference for doing their own training

Purpose C: Comparison of perceptions of quality of life -- to describe similarities and differences in a sample of Montana vocational education and nonvocational education graduates' perceptions of their current quality of life.

Economic variables

Variable C.1 -- Employment status

Variable C.2 -- Income

Sociological variables

Variable C.3 -- Satisfaction with living conditions

Variable C.4 -- Relationships with fellow workers

Psychological variables

Variable C.5 -- Job satisfaction

Variable C.6 -- Issues associated with "happiness"

Variable C.7 -- Issues associated with "anxiety"

Variable C.8 -- Locus of control, internal/external

Variable C.9 -- Boredom

Rationale for the Study Population

The study population consisted of a random sample of individuals between the ages of 23 and 29 who have been employed within the state of Montana for the past two years and who fall into one of the following three categories:

1. Postsecondary vocational education graduate of a Montana vocational/technical center or community college

2. Vocational education graduate of a Montana high school

3. High school graduate having no vocational education (primarily students in basic education or nonvocational college preparatory courses of study)

The rationale for the study population was that:

1. Graduates' perceptions of the worth and quality of their secondary and/or postsecondary education have more validity if the graduate has had an opportunity to apply his or her knowledge and skills in life roles outside formal education.

2. Recency of educational and work experience is essential to reliable recall on the part of the individuals in the study population.

3. Comparability among groups with varying educational backgrounds depends upon the individuals in the study population having certain common requisites. Being 23 to 29 years of age and being employed within the state of Montana for the past two years were the two common requisites applied in this study.

Data Collection Components

Three methods were used to collect data on the 21 study variables:

1. Telephone interviews. Eight trained interviewers used an interview guide (Appendix A.1) developed for this study to conduct telephone interviews with 857 Montana high school graduates of the classes of 1970 and 1971. At the time of the interviews, June, 1977, all of the respondents were between the ages of 23 and 25.

The telephone survey served four purposes:

a. Selection of the random population sample

b. Collection of identification and status information data about the respondents

c. Collection of data on four study variables concerned with quality of graduates' training and four study variables concerned with graduates' perceptions of their quality of life

d. Initial contact of individuals to whom followup mail questionnaires were sent

2. Mail questionnaires. A followup mail questionnaire (Appendix A.2) was sent to each graduate that had been interviewed by telephone. The questionnaire sought data relative to six variables concerned with graduates' perceptions of their quality of life. Of 857 questionnaires sent, 13 were returned as nondeliverable and 13 were returned too late for coding. Of the remaining 831 questionnaires, 440 (53 percent) were completed and returned.

3. Employer surveys. A mail questionnaire (Appendix A.3), seeking data on seven study variables concerned with employers' assessment of the quality of graduates' vocational training, was sent to each of 85 employers located within the state of Montana. Thirty-six (42 percent) of the employers completed and returned the questionnaires.

   Employers were selected on the basis of their:

   a. Representing various sizes of business, industry or institution as indicated by the numbers of employees

   b. Representing various occupational areas

Sampling Design

The population sampled was the 20,000 graduates of the classes of 1970 and 1971 from Billings, Butte, Great Falls, Helena, Kalispell and Missoula, Montana high schools. The random sample framework established vocational education program service areas for five curricular areas -- health occupations, business

and office, distributive, agriculture, and trade and industrial -- for those who had had vocational education at the secondary level and those who had had vocational education at the post-secondary level (community college and vocational/technical centers).

Sampling theory holds that "to be within ± 9% error on 50/50 variables, 119 cases are required to be accurate 19 times in 20."[12] Accordingly, the sample design for the present study called for 119 cases per one control group and each of nine curricular areas, or 119 x 10 = 1,190 cases in the ten cells. The total sample was as follows:

1 Control Group Cell	(1)	Sample of graduates without formal training in vocational education	119
5 Postsecondary Vocational Technical Educational Program Service Areas Cells	(2)	Health Occupations	119
	(3)	Business & Office	119
	(4)	Distributive	119
	(5)	Trade & Industrial	119
	(6)	Agriculture	119
4 Secondary Vocational Educational Program Service Areas Cells	(7)	Business & Office	119
	(8)	Distributive	119
	(9)	Trade & Industrial	119
	(10)	Agriculture	119
		Total Sample	1,190

Although the investigators attempted to get a valid sample among curricular areas, they were unable to do so because not all of the curricular areas had programs implemented in 1970, because some potential respondents could not be reached by telephone, and

[12] Parten, Mildred, Surveys, Polls and Samples: Practical Procedures; Cooper Square Publishers, New York; 1966.

because some potential respondents could not meet the two-year employment criterion. However, the study population is a stratified random sample, and the Ns are statistically valid among the three comparison groups (postsecondary vocational education graduates, secondary vocational education graduates and nonvocational education graduates) at the aggregated level. Consequently, any comparisons made in analyzing the data are among the three comparison groups rather than among curricular areas.

Instrumentation

A. Rationale For and Development Of Items for the Instruments

1. Telephone survey (Appendix A.1). The items eliciting respondents' comments in the telephone interviews were chosen to accomplish the survey's four purposes:

   a. Selecting the population sample

   b. Identifying the individuals in the sample

   c. Collecting data on eight variables

   d. Preparing for mailing followup questionnaires

   The items were sequenced in such a way as to begin with respondent-centered questions which encouraged discussion of personal background, followed by questions involving respondents' ratings of their vocational and academic training, and ending with study-centered questions seeking responses directly related to selected variables.

   This arrangement of the items permitted respondents to talk freely and openly but with sufficient direction to furnish data that could be quantified and analyzed. The length of the telephone interviews ranged from five to twenty minutes.

2. Mailout questionnaire (Appendix A.2). Each individual in the population sample who was contacted by phone was mailed a followup questionnaire. The items on the questionnaire were designed to probe more deeply the respondents' opinions on study variables discussed

briefly on the telephone and to elicit responses on six variables relating to the respondents' perceptions of quality of life.

Although the items forced responses through a multiple-choice format, the number of choices (ranging from three to twenty per item) and the 4- and 5-point scales in the instrument allowed respondents considerable latitude.

3. Employer survey (Appendix A.3). The employer survey sought specifics on seven study variables. To counter any tendency toward the respondents' becoming bored or "patterning" their responses, four different kinds of items were used:

   a. Open-ended

   b. Multiple choice

   c. Yes or no

   d. Rating scale

   On five of the seventeen items, combinations of two kinds of items were used.

B. Pilot Testing

The telephone survey and followup mail questionnaire were pilot tested in the state of Minnesota beginning the weekend of March 12, 1977. The pilot test involved 120 Minnesota high school graduates, five years out of high school, representing three comparison groups -- those who took general academic/general courses in high school, those who took vocational courses in high school, and those who went on to postsecondary education. Minnesota was selected as a pilot test site because of its similarity to Montana in regard to four factors: a) geographical characteristics, b) population density/sparsity configurations, c) population immobility, and d) vocational school and junior (community) college organizational structures. The telephone

survey instrument and mailout questionnaire were revised on the basis of the pilot test. On both instruments, revisions reduced the number of items, combined some items and improved the clarity of some of the questions.

The employer survey was pilot tested with an ad hoc group of Portland, Oregon employers who represented businesses, industries and institutions employing from 10 to 200 persons. The survey instrument was revised after the pilot test to shorten the instrument and to eliminate questions for which employers generally lacked information for answering.

C. Protection of Human Subjects

Drafts of the three instruments proposed for use in this study were submitted February 24, 1977 to the Northwest Regional Educational Laboratory's (NWREL's) Committee for the Protection of Human Subjects, with a request for review. The instruments had been pre-piloted for sensitivity of questions by Oregon State University graduate students. Subjects were deemed to be at little or no risk. Assurances were made that access to data would be limited to NWREL personnel and other personnel involved in the project, that the respondent would be informed of anonymity and that individuals would be free to choose whether to respond. Approval for use of the study instruments was subsequently granted by the NWREL Committee on the Protection of Human Subjects.

Analysis Plan

An analysis plan for the present study begins on Page 18 The plan presents -- for each of the study's three purposes --

the related variables, the related instrument items and the types of analyses to be made of the data. Study findings and a summary and conclusions of the study will appear in Sections IV and V respectively, using the same matrix format as the analysis plan.

ANALYSIS PLAN

STUDY PURPOSES	STUDY VARIABLES	INSTRUMENT ITEMS*	TYPES OF ANALYSES TO BE MADE
A. Graduates' perceptions of their training	1. Vocational graduates' ratings of their vocational education	1.1 (TI) Thinking back to your vocational experiences, how would you rate your vocational education?	1.1.1 Quantitative analysis, secondary vs. postsecondary voc.ed.graduates
		1.2 (TI) Would you have liked other types of information included in your training?	1.2.1 Comparative analysis, secondary vs. postsecondary voc.ed.graduates
		1.3 (TI) Did you consider your training a wise choice?	1.3.1 Comparative analysis, secondary vs. postsecondary voc.ed.graduates
		1.4 (TI) Would you have liked more experience in your training before you started working?	1.4.1 Comparative analysis, secondary vs. postsecondary voc.ed.graduates
	2. Relationships between vocational education and employment	2.1 (TI) What did you do after completing your education?	2.1.1 Comparative analysis, secondary vs. postsecondary voc.ed.graduates
		2.2 (TI) Did you attempt to find a job in the field of your vocational classes?	2.2.1 Same as 1.2.1
		2.3 (TI) Could you have gotten your job without the training?	2.3.1 Same as 1.3.1
		2.4 (TI) Following your education, how many months did it take you to get your first full time job?	2.4.1 Same as 1.4.1
		2.5 (TI) How did you obtain your first full-time job after completing your education?	2.5.1 Descriptive analysis, secondary and postsecondary voc.ed.graduates

*Letter symbols in parentheses before the instrument items designate the instrument in which the item appeared: TI=Telephone Interview Survey Guide; MO=Mailout Questionnaire; E=Employer Survey Questionnaire

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ANALYSIS PLAN (Continued)

STUDY PURPOSES	STUDY VARIABLES	INSTRUMENT ITEMS	TYPES OF ANALYSES TO BE MADE
A. Graduates' perceptions of their training	2. Relationships between vocational education and employment (cont.)	2.6 (TI) Are you presently employed in the field in which you were educated?	2.6.1 Comparative analysis, secondary vs. postsecondary voc.ed.graduates vs. academic/general graduates
		2.7 (TI) How well did your education prepare you for this job?	2.7.1 Quantitative analysis, secondary vs. postsecondary voc.ed.graduates vs. academic/general graduates
	3. Graduates' assessments of their academic instruction	3.1 (TI) Please rate your high school education as to academic instruction.	3.1.1 Comparative analysis, secondary voc.ed. and nonvoc. ed. graduates and postsecondary voc.ed. graduates
	4. Graduates' assessments of contribution education has made to their life today	4.1 (TI) To what extent has your education contributed in making your life what it is today?	4.1.1 Same as 3.1.1
	5. Graduates' assessments of their student guidance/counseling	5.1 (TI) Please rate your high school education as to student guidance /counseling.	5.1.1 Same as 3.1.1
		5.2 (TI) What would you have done differently if you had been given more information and guidance by the high school staff?	5.2.1 Descriptive analysis, secondary voc.ed. and nonvoc. ed. graduates and postsecondary voc.ed. graduates

ANALYSIS PLAN (Continued)

STUDY PURPOSES	STUDY VARIABLES	INSTRUMENT ITEMS	TYPES OF ANALYSES TO BE MADE
B. Employers' assessments of graduates' training	1. How employees are obtained	1.1 (E) How do you obtain your employees?	1.1.1 Descriptive analysis
		1.2 (E) Do you usually contact the placement of the local vocational/technical institute for any potential employees to fill a job vacancy?	1.2.1 Descriptive analysis; compare with 1.3.1
		1.3 (E) Do you usually contact the high school counselor or placement office to fill job vacancies?	1.3.1 Descriptive analysis; compare with 1.2.1
	2. Recruiting practices and problems	2.1 (E) Thinking back over the last six months, from which of the three groups (postsecondary vocational, high school vocational, nonvocational) do you employ most frequently?	2.1.1 Comparative analysis, secondary voc.ed. and nonvoc.ed. graduates and postsecondary voc.ed. graduates
		2.2 (E) Does your firm have any problems finding qualified employees?	2.2.1 Comparative analysis among occupational areas
		2.3 (E) Do you currently have job openings that you have been unable to fill from within your organization?	2.3.1 Same as 2.2.1
		2.4 (E) What do you think is the major problem for business and industry in the hiring of new employees?	2.4.1 Descriptive analysis
		2.5 (E) How could this (2.4) problem be solved?	2.5.1 Descriptive analysis
	3. Employers' ratings of quality of postsecondary graduates' vocational education programs	3.1 (E) How would you rate, in general terms, the quality of vocational education as seen in your employees who have graduated from the Montana vocational/technical centers?	3.1.1 Quantitative analysis; compare with 4.1.1 and 5.1.1
		3.2 (E) Would you have liked other types of training included in their education?	3.2.1 Descriptive analysis; compare with 4.2.1 and 5.2.1

ANALYSIS PLAN (Continued)

STUDY PURPOSES	STUDY VARIABLES	INSTRUMENT ITEMS	TYPES OF ANALYSES TO BE MADE
B. Employers' assessments of graduates' training (continued)	3. Employers' ratings of programs (cont.)	3.3 (E) Would you have liked to have seen more experience included in their training before starting work?	3.3.1 Descriptive analysis; compare with 4.3.1
		3.4 (E) Is there any weak skill or technical area that should be strengthened by the Montana vocational/technical centers?	3.4.1 Descriptive analysis
		3.5 (E) Do the positions held by the vocational/technical graduates require the skill training they have?	3.5.1 Descriptive analysis
		3.6 (E) Are there specific training courses that if taught by a vocational school or college would benefit your firm?	3.6.1 Descriptive analysis
	4. Employers' ratings of quality of secondary vocational education programs	4.1 (E) How would you rate, in general terms, the quality of the high school vocational education programs as seen in your employees who have graduated from high school and come directly to work for you?	4.1.1 Quantitative analysis; compare with 3.1.1 and 5.1.1
		4.2 (E) Would you have liked other types of training included in their education before starting work?	4.2.1 Descriptive analysis; compare with 3.2.1 and 5.2.1
		4.3 (E) Would you have liked to have seen more experience included in their training before starting work?	4.3.1 Descriptive analysis; compare with 3.3.1 and 5.3.1
		4.4 (E) How greatly are you influenced by the high school graduate with vocational education?	4.4.1 Descriptive analysis

ANALYSIS PLAN (Continued)

STUDY PURPOSES	STUDY VARIABLES	INSTRUMENT ITEMS	TYPES OF ANALYSES TO BE MADE
B. Employers' assessments of graduates' training (continued)	5. Employers' ratings of academic/general graduates from secondary schools	5.1 (E) How would you rate the high school graduate who has not had any vocational training in school? How prepared is he/she as to ability to perform the work?	5.1.1 Quantitative analysis; compare with 3.1.1 and 4.1.1
		5.2 (E) Would you have liked other types of skills included in his/her education?	5.2.1 Descriptive analysis; compare with 3.2.1 and 4.2.1
	6. Employers' perceptions of graduates' attitudes	6.1 (E) Generally speaking, do you find a difference in attitude among the groups (postsecondary voc.ed. graduates, secondary voc.ed. graduates, nonvoc.ed. graduates)?	6.1.1 Comparative analysis among the three groups in the population sample
	7. Extent of employers' preference for doing their own training	7.1 (E) Would you prefer to do your own training, on the job or otherwise, of the high school student who has not had any vocational training, or would you prefer to hire a high school graduate who has had vocational training?	7.1.1 Descriptive analysis
		7.2 (E) Would you rather have your employees trained in a formal institution or trained on the job?	7.2.1 Descriptive analysis
C. Comparison of perceptions of quality of life	1. Employment status	1.1 (TI) Are you presently employed?	1.1.1 Descriptive analysis; compare among three study groups
		1.2 (TI) Can you estimate your total period of unemployment since your high school graduation?	1.2.1 Same as 1.1.1

ANALYSIS PLAN (Continued)

STUDY PURPOSES	STUDY VARIABLES	INSTRUMENT ITEMS	TYPES OF ANALYSES TO BE MADE
C. Comparison of perceptions of quality of life (cont.)	2. Income	2.1 (TI) Please estimate your 1976 total income. (Do not include salary of spouse, inheritance.)	2.1.1 Same as 1.1.1
	3. Satisfaction with living conditions	3.1 (TI) Considering your general living conditions, neighborhood, housing, etc., how satisfied or dissatisfied are you with your residence?	3.1.1 Same as 1.1.1
	4. Relationships with fellow workers	4.1 (MO) Which of the following statements comes closest to expressing your relationships with fellow workers?	4.1.1 Same as 1.1.1
	5. Job satisfaction	5.1 (MO) Rate your present (or last) job on each of the characteristics listed below.	5.1.1 Quantitative analysis; compare among three study groups
	6. Issues associated with "happiness"	6.1 (MO) We all feel that certain issues are more important than others in adding to our general feeling of happiness with life. For each of the following items indicate how satisfied you have been with these issues over the past six months.	6.1.1 Same as 1.1.1
	7. Issues associated with "anxiety"	7.1 (MO) Problems of life are common to many of us. How often have any of these problems bothered you?	7.1.1 Same as 1.1.1
	8. Locus of control, internal/external	8.1 (MO) How do you feel about the following statements (describing internal/external control issues)?	8.1.1 Same as 1.1.1
	9. Boredom	9.1 (MO) How much of the time are you bored?	9.1.1 Same as 1.1.1

IV. STUDY FINDINGS

This section begins with a discussion of the characteristics of the study population. Following that, the study findings based on the analyses described in the analysis plan in Section III are presented in detail. Findings are given relative to each variable for each of the three study purposes:

Purpose A: Graduates' perceptions of their training

Purpose B: Employers' assessments of graduates' training

Purpose C: Comparisons of perceptions of quality of life

Characteristics of the Study Population

High school graduates. Following telephone contact with 857 high school graduates in the population sample and based on initial questions about educational experience, the graduates were categorized into three groups:

1. Postsecondary vocational graduates from Montana vocational/technical centers or community colleges
2. Vocational education graduates from high school
3. High school graduates having no vocational education

The second source of data -- the mailout questionnaire -- was completed and returned by 440 respondents. Of these, 183 (48.5 percent) were returned by the postsecondary vocational graduates, 184 (52.1 percent) by the high school vocational graduates and 73 (55.9 percent) by the academic/general group. The table on Page 25 displays the number of respondents, by curricular areas, contacted through the telephone interviews and the mailout questionnaire.

Analysis of Study Population
by Group

GROUP	CURRICULAR AREA	Telephone Interview Respondents				Mail Questionnaire Respondents			
		Number	Percent of Group	Sex Male	Female	Number	Percent of Group	Sex Male	Female
POST-SECONDARY VOCATIONAL	Agriculture	49	13.0	49	0	26	14.2	26	0
	Business/Office	124	32.9	33	91	67	36.6	13	54
	Health	47	12.5	2	45	25	13.7	0	25
	Distributive	40	10.6	21	20	19	10.4	8	11
	Trade/Industrial	118	31.3	116	2	46	25.1	45	1
	TOTAL	377	100.0	221	158	183	100.0	92	91
HIGH SCHOOL VOCATIONAL	Agriculture	47	13.3	47	0	22	12.0	22	0
	Business/Office	123	34.8	19	104	76	41.3	10	66
	Distributive	85	24.1	35	50	37	20.1	13	24
	Trade/Industrial	98	27.5	97	0	49	26.6	49	0
	TOTAL	353	100.0	198	154	184	100.0	94	90
ACADEMIC/GENERAL		127	100.0	65	61	73	100.0	35	38
TOTAL		857		484	373	440		221	219

The study population includes 377 graduates from postsecondary vocational programs with the largest percentage (approximately one-third each) from the curricular areas of Business/Office and Trade/Industry. Distributive, Health and Agriculture account for the remaining one-third, their numbers ranging from 10.6 percent to 13 percent of the group. All respondents within the postsecondary group had completed programs at either a community college (17 percent) or at a vocational /technical center (83 percent).

The graduates of high school vocational education programs number 353. Again, Business/Office and Trade/Industry students are similarly represented, with Distributive graduates slightly lower at 24 percent. Agriculture programs are 13 percent of the high school vocational group.

The nonvocational education graduates constituting the control group were those graduates identifying themselves as being registered in an academic or general curriculum during their high school experience. This group numbers 127.

Employers. A mailout questionnaire was sent to each of the 85 employers located within the state of Montana. The personnel managers or owners of 36 business, industrial or service organizations responded, representing a 42 percent return. The numbers of employers responding are listed below by the number of employees within their organizations.

Number of Employers Responding	Number of Employees Within Organization
7	1-10
5	11-25
10	26-100
12	101-500
1	1,000+
1	5,000+

Employment within these organizations ranged from 2 to 5,910 employees and generally represented the curricular areas of the study, with 30 organizations hiring from each of the Trade/Industrial and Business/Office programs, 8 from Agriculture, 6 from Health and Distributive, and 18 from the Academic/General curriculum.

Study Findings

On the pages that follow, the study findings, based on analyses of the responses made by individuals in the study population described above, are presented in matrix form. In the matrix, the three study purposes and their variables are arranged in the same order as they were in the analysis plan in Section III of this report, and the findings are stated for each variable. Analyses of responses on the instrument items listed for the variables in the analysis plan appear only if the data contribute to accomplishing one of the three purposes of the study.

STUDY FINDINGS

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
A. Graduates' perceptions of their training	1. Vocational graduates' ratings of their vocational education	1.1 Postsecondary vocational education graduates rated their postsecondary vocational education experience higher than they rated their secondary vocational education experience, the mean ratings being 80 and 72 respectively of a possible 100. Secondary vocational education graduates gave their vocational education a mean rating of 75--higher than the postsecondary graduates rated secondary vocational education, but lower than postsecondary graduates rated postsecondary vocational education. Detailed data appear in Appendix B.1. 1.2 Forty-four percent of the post-secondary vocational education graduates and 35 percent of the secondary vocational education graduates said they would have liked more experience during their training prior to beginning employment.
	2. Relationships between vocational education and employment	2.1 Sixty-three percent of the postsecondary vocational education graduates and 41.2 percent of the secondary vocational education graduates entered full-time jobs following completion of their education programs. Detailed data appear in Appendix B.2. 2.2 Sixty-seven percent of the postsecondary vocational education graduates and 55 percent of the secondary vocational education graduates said they were successful in obtaining employment in the field of their vocational training. 2.3 Thirty-three percent of the postsecondary vocational education students, 43 percent of the secondary vocational education students and 29 percent of the academic/general students found employment prior to graduation. Following graduation, 44 percent of the postsecondary vocational education graduates, 35 percent of the secondary vocational graduates and 40 percent of the academic/general graduates found employment in less than three months. Twenty-three percent of the postsecondary vocational education graduates, 21 percent of the secondary vocational education graduates and 30 percent of the academic/general graduates took three months or longer to find employment. Detailed data appear in Appendix B.3.

STUDY FINDINGS (Continued)

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
A. Graduates' perceptions (continued)	2. Relationships between voc.ed. and employment (continued)	2.4 Fifty-five percent of the postsecondary vocational education graduates, 57 percent of the secondary vocational education graduates and 37 percent of the academic/general graduates were employed at the time of the survey in the field in which they were educated.
		2.5 Postsecondary vocational education graduates gave their education a mean rating of 80 on preparing them for employment. This compared with a mean rating of 70 by secondary vocational education graduates and a mean rating of 69 by academic/general graduates. Detailed data appear in Appendix B.4.
	3. Graduates' assessments of their academic instruction	3.1 Twenty-five percent of the academic/general students rated their high school academic instruction "excellent" compared with 15 percent of the postsecondary vocational education graduates and 14 percent of the high school vocational education students giving their high school academic instruction an "excellent" rating.
	4. Graduates' assessment of contribution education has made to their life today	4.1 There is no difference among the means of the ratings given education's contribution to their present life by postsecondary vocational education graduates, secondary vocational education graduates and academic/general graduates. Detailed data appear in Appendix B.5.
	5. Graduates' assessments of their student guidance /counseling	5.1 All three comparison groups give low mean ratings (46, 49 and 49 on a scale of 100 for postsecondary vocational, secondary vocational and academic/general graduates respectively) on the quality of their high school guidance and counseling. Detailed data appear in Appendix B.6.

STUDY FINDINGS (Continued)

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
A. Graduates' perceptions of their training (continued)	5. Graduates' assessments of their student guidance /counseling (cont.)	5.2 Asked what they would have done differently if they had been given more information and guidance by the high school staff, 11.4% of the postsecondary vocational graduates, 9.5% of the secondary vocational graduates and 12.6% of the academic/general graduates said they would have taken more training. However, 53.8% of the postsecondary vocational graduates, 63.4% of the secondary vocational graduates and 55.1% of the academic/general graduates said they would have done nothing differently.

STUDY FINDINGS (Continued)

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
B. Employers' assessments of graduates' training	1. How employees are obtained	1.1 Employees were recruited mainly through walkins (25 responses from 36 employers) and local employment services (24 responses). Nineteen employers recruited through local advertising (19 responses). Placement offices of the vocational/technical centers were mentioned next most frequently (17 responses). Employees were seldom recruited from local high schools (4 responses) or community colleges (2 responses).
	2. Recruiting practices and problems	2.1 Twenty-six (72%) of the employers responding cited difficulty in finding qualified employees in the areas of technical/mechanical (12 responses), office skilled (10 responses), professional (8 responses), sales (6 responses), health (4 responses) and management (3 responses). 2.2 Eleven (31%) of the employers surveyed had unfilled job openings. 2.3 Nineteen (53%) of the employers surveyed cited a lack of qualified applicants as a major problem in hiring new employees. 2.4 Seventeen (47 percent) of the employers responding suggested an increase in training programs as a solution to employers' hiring problems. This was the solution most frequently suggested by the employers surveyed.

STUDY FINDINGS (Continued)

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
3. Employers' assessments of graduates' training (continued)	3. Employers' ratings of quality of postsecondary graduates' vocational education programs	3.1 The mean rating given by employers on the quality of postsecondary graduates' vocational education programs was 74. Seventy percent of the employers responding said they would like to have seen more experience included in the training prior to the graduates' starting work. One-fourth of the employers would have liked other types of training included in the postsecondary program. Additional program areas suggested were LPN training, agri-business and agri-related vocations, legal secretarial training, diesel mechanics, transportation and human services. Weak areas in postsecondary vocational education were identified as: training to become profit-productive, positive attitude development, public relations information, "people training," efficient organization of time, on-the-job training and basic skills. Detailed data appear in Appendix B.7.
	4. Employers' ratings of quality of secondary vocational education programs	4.1 The mean rating given by employers on the quality of secondary vocational education programs was 55. Seventy-eight percent of the employers said they would like to have seen more experience included in the training prior to the graduates' starting work. Almost one-half (44%) of the respondents would have liked other types of training included in the secondary vocational education program, e.g., experience-based education, "money skills," "people skills" and a basic knowledge of economics. Detailed data appear in Appendix B.7.
	5. Employers' ratings of academic /general graduates from secondary schools	5.1 The mean rating given by employers on the quality of education of academic/general graduates was 48. No excellent ratings were given. About half the employers said they would like to have seen more experience included in the training prior to the graduates' starting to work. Detailed data appear in Appendix B.7.

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
B. Employers' assessments of graduates' training (continued)	6. Employers' perceptions of graduates' attitudes	6.1 Asked "Generally speaking, do you find a difference in attitude among the three groups in any of the following indicators?", the numbers of employers responding were as follows:

	Voc/Tech Institute	High School Vocational	General Education	No Difference
Most highly motivated	16	1		5
Most highly committed to the job	16	1		4
Most informed about how the system works	13	1	2	6
Least amount of absenteeism	11			10
Commitment to the work ethic	11		1	6

	7. Extent of employers' preference for doing their own training	7.1 Less than one-third of the employers responding indicated a preference for conducting their own training programs. Thirty of the 36 organizations responding, however, train their own personnel for purposes of promotion. Most employers felt that formal vocational training assists on-the-job development.

STUDY FINDINGS (Continued)

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
C. Comparison of perceptions of quality of life	1. Employment status	1.1 Twenty-one percent of the persons in the study population were unemployed at the time of the survey. Of the 79 percent employed, 80.6 were postsecondary vocational education graduates, 79.4 were secondary vocational graduates and 70.9 were academic/general graduates.
		1.2 Of persons in the study population that had been unemployed since graduation, secondary vocational graduates tended to have the shortest periods of unemployment, postsecondary vocational graduates the next longest and academic/general graduates the longest. Detailed data appear in Appendix B.8.
	2. Income	2.1 Of those who responded, more academic/general graduates (34% of that group) had 1976 incomes of less than $5,000 than the postsecondary vocational education graduates (26%) or the secondary vocational education graduates (30%) had. Thirty-three percent of each of the postsecondary and secondary vocational education graduate groups had incomes of $10,000 or more, while only 28% of the academic/general graduates reported incomes of $10,000 or more. Detailed data appear in Appendix B.9.
	3. Satisfaction with living conditions	3.1 Only 8% of the postsecondary vocational graduates, 7% of the secondary vocational graduates and 9% of the academic/general graduates reported any dissatisfaction with their general living conditions.

STUDY FINDINGS (Continued)

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
C. Comparison of perceptions of quality of life (cont.)	4. Relationships with fellow workers	4.1 Overall means of responses on feeling free to speak with fellow workers were about the same for the three comparison groups. However, the percentage of responses indicating "Feel free and do speak to all fellow workers, including management" was highest for postsecondary vocational graduates. Academic/general graduates had the highest percentage of responses on "Feel free and do speak openly to all workers (excluding management)." Detailed data appear in Appendix B.10.
	5. Job satisfaction	5.1 Comparisons among groups (postsecondary vocational, secondary vocational and academic/general) suggest that economic characteristics of their jobs (starting pay, salary increases, fringe benefits) are viewed as "excellent" by more postsecondary and secondary vocational graduates than academic/general graduates. Academic/general graduates rate their jobs "excellent" more often than the vocational graduates on choice and length of vacations, having friendly co-workers, having jobs with status, doing challenging work, doing work they feel they do well, working in the area in which they specialized, expanding their skills and abilities, having job security and permanence, and doing important and worthwhile work. Secondary vocational graduates rated opportunity for advancement in their jobs as "excellent" more frequently than graduates in the other two groups. Postsecondary vocational graduates rated freedom to make their own decisions on their jobs as "excellent" more frequently than graduates in the other two comparison groups. Detailed data appear in Appendix B.11.

STUDY FINDINGS (Continued)

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
C. Comparison of perceptions of quality of life (continued)	6. Issues associated with "happiness"	6.1 Comparisons among groups indicate that postsecondary vocational graduates, more often than the other two groups, are "very satisfied" with expanding their abilities, having children and being a parent, and passive recreation. Secondary vocational graduates, more often than the other two groups, are "very satisfied" with health and well-being, being in love, exercise and active recreation, helping others, and friends and social life. Academic/general graduates, more often than the other two groups, are "very satisfied" with marriage, job or primary activity, and financial situation. Detailed data appear in Appendix B.12.
	7. Issues associated with "anxiety"	7.1 Comparisons among groups indicate that postsecondary vocational graduates, more often than the other two groups, mention being bothered considerably or occasionally by depression. Secondary vocational graduates, more often than the other two groups, mention being bothered by money problems, drugs and/or alcohol, loneliness and thoughts about the future. Academic/general graduates, more often than the other two, mention being bothered by concerns about physical health. Detailed data appear in Appendix B.13.

STUDY FINDINGS (Continued)

STUDY PURPOSES	STUDY VARIABLES	STUDY FINDINGS
C. Comparison of perceptions of quality of life (continued)	8. Locus of control, internal/external*	8.1 Comparisons among groups show that postsecondary vocational graduates, more often than the other two groups, agree with their being persons of worth and with the statements that "luck is more important than hard work" and "planning makes one unhappy." Secondary vocational graduates, more often than the other two groups, mentioned having positive attitude toward self and showed agreement with the statement, "People who accept their condition in life are happier than those who try to change things." Academic/general graduates, more often than the other two groups, say they do things well. Detailed data appear in Appendix B.14.
	9. Boredom	9.1 A greater percentage of academic/general graduates said they were almost never bored than was the case with the other two comparison groups. Detailed data appear in Appendix B.15.

*"Externals" are persons who believe that reinforcement comes from outside themselves; they believe in luck and perceive themselves as being largely controlled or manipulated by others. "Internals" believe that their own actions control reinforcement and direction.

V. SUMMARY AND CONCLUSIONS

Study findings were presented in detail in Section IV of this report. Section V summarizes the findings and draws conclusions relative to each of the variables for each of the three purposes of the study. "Conclusions," for the purposes of this report, are inferences or deductions from facts revealed through analyses of the data.

Purpose A: Graduates' perceptions of their training

Variable A.1 -- Vocational graduates' ratings of their vocational education

Summary: On the average, postsecondary graduates rated their postsecondary education higher than either they or the secondary vocational education graduates rated secondary vocational education. Almost one-half of the postsecondary vocational graduates and one-third of the secondary vocational graduates said they would have liked more experience during their training prior to beginning employment.

Conclusions: The quality of postsecondary vocational education in Montana tends to be perceived by graduates to exceed the quality of secondary vocational education in Montana, but the perceived need for experience during training appears greater among postsecondary vocational graduates than among secondary vocational graduates.

Variable A.2 -- Relationships between vocational education and employment

Summary: Analysis of the percentages of responses by comparison groups reveals that two-thirds of the postsecondary vocational graduates and over one-third of the secondary graduates entered full-time jobs following completion of their education programs. Over two-thirds of the postsecondary vocational graduates and over one-half of the secondary vocational graduates found employment in their field of training.

Variable A.2

Summary: (continued) Comparisons among the three groups showed that over half the postsecondary and secondary graduates were employed, at the time of the survey, in the field in which they were educated, but this was true for only a little over a third of the academic/general graduates. More secondary vocational students indicated they found employment prior to graduation than postsecondary and academic/general students did. After graduation, however, more postsecondary vocational graduates found employment in less than three months than did graduates of the other two groups.

Mean ratings of their education as preparation for employment were higher for postsecondary vocational graduates than for graduates in the other two groups. Mean ratings by secondary vocational graduates and academic/general graduates were about the same.

Conclusions: Generally, Montana students who wish to receive education that will enhance their employability and employment success after graduation should enroll in postsecondary vocational education programs, with secondary vocational education programs as a second choice. Finding employment prior to graduation, however, appears easier for secondary vocational students than for postsecondary vocational or academic/general students.

Variable A.3 -- Graduates' assessments of their academic instruction

Summary: One-fourth of the academic/general graduates rated their high school academic instruction "excellent" compared to "excellent" ratings given by one-sixth of the secondary vocational graduates and one-sixth of the academic/general graduates.

Conclusions: For whatever reason(s), vocational graduates in Montana generally hold high school academic programs in less esteem than do academic/general students.

Variable A.4 -- Graduates' assessments of contribution education has made to their life today

Summary: There is no difference among the means of the ratings given education's contribution to their present life by postsecondary vocational graduates, secondary vocational graduates and academic/general graduates.

Conclusions: The numbers and kinds of influences affecting one's "present life" (which is not defined) are so great and complex that discrimination by or among groups of respondents is not apparent.

Variable A.5 -- Graduates' assessments of their student guidance/counseling

Summary: Mean ratings at about the same low level were given the quality of high school guidance and counseling by each of the three comparison groups. However, when asked what they would have done differently if they had been given more information and guidance by the high school staff, only ten to thirteen percent of the respondents said they would have taken more training; the majority of the respondents in each group said they would have done nothing differently.

Conclusions: The majority of graduates in all three study groups perceived high school counseling and guidance as being of low quality and generally not useful even if more had been provided.

Purpose B: Employers' assessments of graduates' training

Variable B.1 -- How employees are obtained

Summary: Employees were recruited through walkins, local employment services and placement offices of the vocational/technical centers. Very few organizations recruited employees from high schools or community colleges.

Variable B.1 (continued)

Conclusions: The data imply that high schools and community colleges should prepare students for seeking and obtaining jobs on their own. The data also imply that high schools and community colleges should focus on keeping close liaison with employment services and vocational/technical centers regarding employment opportunities and requirements rather than trying to place students themselves.

Variable B.2 -- Recruiting practices and problems

Summary: The majority of the employers surveyed cited a lack of qualified applicants as a major problem in hiring applicants. The suggestion made most frequently for solving the problem was an increase in training programs. A third of the employers surveyed had unfilled job openings.

Conclusions: Employers encouraged establishing more training programs to produce more qualified applicants. Implied is a need for more employer/educator dialogue to determine cooperatively what training programs and what outcomes are desirable in terms of required job qualifications.

Variables B.3, B.4 and B.5 combined -- Employers' ratings of quality of postsecondary vocational, secondary vocational and academic/general programs based on their observations of graduates of the three programs

Summary: The employers' mean rating of the quality of postsecondary vocational graduates' programs was substantially higher than their mean rating of secondary vocational graduates' programs which, in turn, was slightly higher than their mean rating of academic/general programs. Three-fourths of the respondents said they would have liked to have seen more experience included in both postsecondary and secondary vocational training. Additional types of training employers mentioned most frequently that they would have liked to have included in both postsecondary and secondary programs were interpersonal skills, management skills and a knowledge of economics.

Variables B.3, B.4 and B.5 combined -- (continued)

Conclusions: Of the three comparison groups, employers hold postsecondary vocational graduates' programs in substantially the highest esteem. The large majority of employers would like to have more work-experience and interpersonal and management training included in both postsecondary and secondary vocational programs.

Variable B.6 -- Employers' perceptions of graduates' attitudes

Summary: Of employers perceiving differences in attitudes among graduates in the three comparison groups, they favored almost unanimously the postsecondary vocational graduates in terms of the five attitudinal measures given in the survey instrument.

Conclusions: For whatever reason(s), postsecondary vocational graduates, more than secondary vocational or academic/general graduates, possess those attitudinal qualities that employers seek in their employees.

Variable B.7 -- Extent of employers' preference for doing their own training

Summary: Less than one-third of the employers surveyed expressed a preference for training their own employees, but the great majority train their own personnel for advancement and promotion.

Conclusions: Employers generally want their employees formally trained before beginning work with their organizations, believing that formal training enhances employees' on-the-job development and success in any further training conducted by the organization.

Purpose C: Comparison of perceptions of quality of life

Variable C.1 -- Employment status

Summary: A greater percentage of postsecondary and secondary graduates than academic/general graduates were employed at the

Variable C.1

Summary: (continued) time of the survey. Of persons unemployed at any time since graduation, academic/general graduates tended to have the longest periods of unemployment.

Conclusions: Generally speaking, vocational graduates were unemployed less and for shorter periods than academic/general graduates.

Variable C.2 -- Income

Summary: More academic/general graduates than postsecondary or secondary vocational graduates had annual incomes of less than $5,000. Fewer academic/general graduates than postsecondary or secondary vocational graduates had incomes of $10,000 or more.

Conclusions: Generally, Montana students who wish to receive education that will enhance their earning power during the first five years following their graduation should enroll in vocational rather than academic/general programs.

Variable C.3 -- Satisfaction with living conditions

Summary: Less than ten percent of the graduates in any of the three comparison groups reported any dissatisfaction with their general living conditions.

Conclusions: "General living conditions" as a study variable does not appear to discriminate among the comparison groups.

Variable C.4 -- Relationships with fellow workers

Summary: Means of the responses relative to freedom to speak and speaking with fellow workers were about the same for the three comparison groups. The percentage of responses indicating "Feel free and do speak to all fellow workers, including management" was highest for postsecondary vocational graduates.

Conclusions: Whereas graduates in all three comparison groups appear to communicate well with fellow employees, postsecondary vocational graduates tend to interact more freely with management.

Variable C.5 -- Job satisfaction

Summary: Postsecondary and secondary vocational graduates, more often than academic/general graduates, rate their jobs "excellent" on starting pay, salary increases and fringe benefits. Of the three groups, secondary vocational students rated their jobs "excellent" most often in terms of opportunity for advancement in their jobs. Postsecondary vocational students rated freedom to make their own decisions on their jobs "excellent" more frequently than did graduates in the other two comparison groups. Academic/general graduates, more frequently than postsecondary and secondary vocational graduates, rated their jobs "excellent" in terms of choice and length of vacations, having friendly co-workers, having work with status and challenge that they feel they do well, expanding their skills and abilities, having job security and permanence, and working in the area in which they specialized.

Conclusions: Generally, economic aspects of their jobs and freedom for making their own decisions are perceived as "excellent" by more vocational graduates than academic/general graduates. However, more academic/general graduates than vocational graduates view the psychological aspects of their jobs as "excellent."

Variable C.6 -- Issues associated with "happiness"

Summary: Postsecondary vocational graduates and academic/general graduates each exceeded the other two groups in terms of the number of graduates indicating they were "very satisfied" on three of twenty issues associated with "happiness" that involve job and family. Secondary vocational graduates exceeded the other two groups in terms of the number of graduates indicating they were "very satisfied" on five of twenty issues associated with "happiness" that involve personal well-being and social interaction.

Variable C.6 (continued)

Conclusions: Apparently, satisfaction on issues associated with "happiness" is gained or not gained by individuals irrespective of their educational program. Judging by the issues on which they express the most relative satisfaction, however, postsecondary graduates and academic/general graduates tend to favor those issues involving job and family, while secondary vocational graduates favor those issues involving personal well-being and social interaction.

Variable C.7 -- Issues associated with "anxiety"

Summary: In terms of those issues associated with "anxiety" mentioned by more graduates in one comparison group than by graduates in the other two comparison groups, postsecondary vocational graduates mentioned depression; secondary vocational graduates mentioned money problems, drugs and/or alcohol, loneliness and thoughts about the future; and academic/general graduates mentioned physical health. Of the seven issues stated in the questionnaire, money problems were mentioned most by each of the groups of respondents and drugs and/or alcohol were mentioned least.

Conclusions: Money problems appeared to bother graduates considerably irrespective of their type of training, with slightly more concern about money being expressed by secondary vocational graduates than by graduates in the other two groups. Postsecondary vocational students mentioned depression as a problem more than the other two groups, and academic/general students showed more concern with physical health than the other two groups.

Variable C.8 -- Locus of control, internal/external

Summary: Substantially more postsecondary vocational graduates than secondary vocational or academic/general graduates agreed with statements on the questionnaire that they "are persons of worth,"

Variable C.8

Summary (continued): that "luck is more important than hard work," and "planning makes one unhappy." Substantially more secondary vocational graduates than postsecondary vocational or academic/general graduates agreed that they have a "positive attitude toward self," and that "people who accept their condition in life are happier than those who try to change things." Academic/general graduates, more often than the other two groups, said they "do things well."

Conclusions: Generally, comparison among the three study groups shows that postsecondary vocational graduates tend to rely most on external control, academic/general graduates on internal control, and secondary vocational students on a balance of internal/external control.

Variable C.9 -- Boredom

Summary: A greater percentage of academic/general graduates said they were almost never bored than was the case with the other two comparison groups.

Conclusions: For whatever reason(s), academic/general graduates appeared to be able to avoid boredom more than postsecondary vocational or secondary vocational graduates.

APPENDIX A

STUDY INSTRUMENTS

A.1 Telephone Interview Guide

A.2 Followup Mail Questionnaire

A.3 Employer Survey Questionnaire

A.1 Telephone Interview Guide

Telephone_____ High School_____ M____ F____

Have you been employed for at least 2 years following your high school graduation?

____Yes ____No

Could we talk about your high school days for a moment?

What type of high school program were you enrolled in?

____ College Prep
____ General
> CONTROL

____ Business & Office
____ Distributive Ed.
____ Trade & Industrial
____ Agriculture
> VOCATIONAL

At the time you selected your high school vocational course, did you plan to go to work in that field?

____ Yes, very definitely yes
____ Yes, but not really certain
____ No, but not really certain
____ No, very definitely no

Why did you select the particular course you did?

____Job potential
____Felt need
____Hobby
____Parents
____Teacher
____Employer

What additional kinds of education or training have you had since high school?

____Voc/Tech Institute
____Voc/Ed - Community College
> POST VOC

OCCUPATIONAL

____Agriculture
____Business & Office
____Health
____Distributive Ed.
____Trade & Industrial

Did you complete the course? ____Yes ____No

____College, 2 Yr.____ 4 Yr.____
____Private Trade/Technical
____Business/Commercial
____Apprenticeship
____Other
____None of above

Have you had active military service since high school?

____Yes ____No

Did you have any special training in the service that could be used for Civilian work? ____Yes,_____
____No

ASK ONLY OF VOCATIONAL

Thinking back to your vocational experiences, how would you rate your vocational education?

Excellent	Good	Fair	Poor	
____	____	____	____	During high school
____	____	____	____	Post Secondary

What did you do after completing your education?

____Job: ____Full-time ____Part-time

____College
____Military
____None of the above

Did you attempt to find a job in the field of your vocational classes?

____Yes, employed as_____

____Tried but couldn't find job
____Couldn't get apprenticeship program
____Didn't want that type of work
____Didn't think I learned enough
____New interests
____Another job offer
____Other_____

Did you consider your training a wise choice? ____Yes ____No

Would you have liked more experience in your training before you started working?

____Yes ____No

Would you have liked other types of information to have been included in your training?

____Yes ____No

(Describe:)_____

Could you have gotten your job without the training ____Yes ____No ____Not applicable

LETS GO BACK TO YOUR HIGH SCHOOL DAYS FOR A MOMENT

Please rate your high school education as to:

N/A	Excellent	Good	Fair	Poor	
	O	O	O	O	Quality of academic instruction
O	O	O	O	O	Student guidance/counseling

What would you have done differently if you had been given more information and guidance by the high school staff?

___Taken additional training to prepare for job
___Have gone on to college
___Not have gone on to college
___Selected a different college
___Gone into another line of work
___Not have gotten married so young
___Gone into military
___Nothing
___Other (specify)_____

Following your education, how many months did it take you to get your first full-time job?

___Had a job before graduation
___About 0-3 months
___About 3-6 months
___6 Months-1 year
___1 year plus

How did you obtain your first full-time job after completing your education?

___On my own
___Employment agency
___Through parent, relative, friend
___Through placement office
___Already with employer
___Other (specify)_____

Are you presently employed? ___Yes

↓

If yes, are you self-employed___
supervisory___
other___

How long have your been with your present employer?

About 0-3 months___
About 3-6 months___
6 Months-1 year___
1 year plus___

Do you plan to remain on the job for at least another year?

___Yes

___No

↓

What is the main reason you are not employed?

___No suitable jobs available
___Attending school
___Illness or disability
___Training did not adequately prepare me
___Full-time homemaker
___Military
___Other

Are you presently employed in the field in which you were educated?

___Yes ___No

___No

↓

How well did your education prepare you for this job?

___Exceptionally well prepared
___On the whole, well prepared
___On the whole, not too well prepared
___Very poorly prepared

WHAT ABOUT UNEMPLOYMENT?

Can you estimate your total period of unemployment since your high school graduation?

___0-6 months
___6-12 months
___1-2 years
___2-3 years
___Never unemployed

In Aesop's Fable, "The Ant and the Grasshopper," the ant spent his time working and planning for the future while the grasshopper lived for the moment and enjoyed himself.

Which one are you like?

___The Ant
___The Grasshopper

Please estimate your 1976 total income (do not include salary of spouse, inheritance).

___Less than $5,000
___$5,000 - $9,000
___$10,000 - $14,999
___$15,000 - $19,999
___$20,000 - $24,999
___$25,000 - or more

PLEASE MARK ONE RESPONSE ONLY

What type of housing do you live in?

- O Home (Farm)
- O Dormitory or campus housing
- O Duplex
- O Condominium
- O Apartment
- O Trailer
- O Other

Do you own, rent or lease?

- O Own
- O Rent
- O Lease

Which of the following describes your living arrangement?

- O Alone
- O With spouse - without children
- O With spouse - with children
- O With children only
- O With relatives
- O With friends
- O Cohabiting
- O Family

Considering your general living conditions, (neighborhood, housing, etc.,) how satisfied or dissatisfied are you with your residence?

- O Very satisfied
- O Moderately satisfied
- O Moderately unsatisfied
- O Very Unsatisfied

What is your current marital status?

- O Married
- O Widowed
- O Divorced/separated
- O Single
- O Other (specify)_____

How many children do you have?

- O None, plan not to have any
- O None, plan to have one or more
- O One
- O Two
- O Three
- O Four or more
- O Not applicable

If you were starting your family again, how many children would you have?

- O None
- O One
- O Two or three
- O Four or more
- O Not applicable

If both you and your partner work, how is the housework handled?

- O Both share housework and child care equally
- O One has primary rewponsibility for housework and children
- O Not applicable

How would you classify your support of the Equal Rights Ammendment and its application to women?

- O Strongly agree
- O Moderately agree
- O Strongly disagree
- O Don't know

On most political issues, how would you classify your views?

- O Very liberal
- O Liberal
- O Moderate
- O Conservative
- O Very conservative

Did you vote in the last Presidential election?

- O Yes
- O No

How do you describe yourself?

- O White or Caucasian
- O Native or American Indian
- O Black or Afro-American or Negro
- O Mexican American or Chicano
- O Other Latin American Origin
- O Asian
- O Other_____

To what extent has your education contributed to making your life what it is today?

- O Greatly contributed
- O Moderately contributed
- O Slightly contributed

A.2 Followup Mail Questionnaire

Northwest Regional Educational Laboratory
710 S.W. Second Avenue • Portland, Oregon 97204 • Telephone (503) 248-6800

June 1977

Dear Graduate:

Here's the last half of the questionnaire we talked about on the phone a few days ago. As you no doubt recall, we are interested in measuring the quality of life of the 1970-72 high school graduates of Montana.

Our phone conversation as well as the enclosed questionnaire will, of course, remain anonymous. Please do not sign your name anywhere, and feel free to omit any item that is objectionable to you as an individual. The boxed lettering at the start of the questionnaire only identifies which of the three groups you are in (Academic-General, Postsecondary Vocational, High School Vocational).

When you have completed the questions, use the enclosed return envelope for mailing.

Thanks again for all your help. The time you've taken to share information about yourself will hopefully help us to bring about stronger educational programs for the State of Montana.

Sincerely

Gradia Andersen

Gradia Andersen
NWREL

Enclosure

QUALITY OF LIFE QUESTIONNAIRE

♂ Male ♀ Female	
○	AQ
○	PV
○	HV

1

○	○	○	○	○	
○	○	○	○	○	
○	○	○	○	○	
○	○	○	○	○	
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○	○	○	○	○	
○	○	○	○	○	
○	○	○	○	○	

3

4

How using the scale below, indicate how satisfied you have been with these aspects over the past six months.

A Very satisfied
B Moderately satisfied
C Moderately unsatisfied
D Very unsatisfied
E Not applicable

A	B	C	D	E	
O	O	O	O	O	Participation, interest
O	O	O	O	O	Your financial situation
O	O	O	O	O	Your health and physical well-being
O	O	O	O	O	Your life as a whole
O	O	O	O	O	Your job or primary activity
O	O	O	O	O	Recreation and leisure
O	O	O	O	O	Travel in Iraq
O	O	O	O	O	Living alone
O	O	O	O	O	Your mobility
O	O	O	O	O	Personal and family life
O	O	O	O	O	Your body and physical appearance
O	O	O	O	O	Your religiousness
O	O	O	O	O	Personal development (study & reading, travel, etc.)
O	O	O	O	O	Participation in community affairs and politics
O	O	O	O	O	Personal privacy
O	O	O	O	O	Understanding yourself and understanding your role in life
O	O	O	O	O	Learning and expanding your abilities
O	O	O	O	O	Raising children and being a parent
O	O	O	O	O	Religion
O	O	O	O	O	Marriage

5

Which of the following statements comes closest to expressing your relationships with fellow workers? Mark one circle.

O Feel free and do speak openly to all fellow workers, including management
O Feel free and do speak openly to all fellow workers
O Feel free and do speak openly to more than one other fellow worker
O Speak freely only when spoken to
O Never really feel free to speak

6

Which of the statements comes closest to expressing your feelings about your job? Mark one circle.

O
O
O
O
O

8

Mark one

O
O
O
O
O

9

How do you feel about the following statements? Mark one circle per each line.

A Strongly agree
B Agree
C Disagree
D Strongly disagree
E No opinion

O O O O O
O O O O O
O O O O O
O O O O O
O O O O O

10

O O O O O

11

O O O O O

12

O O O O O

Again, our sincere thanks for the time you have taken to help us in this study.

A.3 Employer Survey Questionnaire

Northwest Regional Educational Laboratory
710 S.W. Second Avenue • Portland, Oregon 97204 • Telephone (503) 248-6800

July 29, 1977

Dear Employer:

The Montana Superintendent of Public Instruction has contracted the Northwest Regional Educational Laboratory (NWREL) to conduct a statewide survey of high school and postsecondary graduates of vocational education programs.

An important section in this report is the evaluation of these programs by the personnel departments in private and public, business and industry.

As a part of this survey, we would very much appreciate your input as to the quality of instruction, strengths and weaknesses of the vocational programs in the State of Montana.

Would you take a moment from your busy schedule and respond to the enclosed questionnaire? All responses will be tabulated, synthesized and reported anonymously. A prepaid return envelope is enclosed.

Your assistance in this project is greatly appreciated.

Sincerely,

Jeannette Hamby
NWREL

JH:ml

Enclosures

Do not answer any item that you feel should not be answered. Do not sign your name.

_____
(Enter City Only Here)

I would like your thoughts as an employer of the vocational training offered through our high schools and vocational/technical institutes. The Montana State Department of Education has asked us to survey employers of these graduates in order to find out how prepared they are when they first step into the job, what their work attitudes are--in general--how good of an employee they are versus someone who has not had this kind of training.

1. How many full-time employees are currently on your payroll?

   _____

2. From which areas do you hire employees? Estimate number of each.

   Agriculture_____ Distributive Education_____ Business & Office_____

   Health_____ Trade & Industrial_____ General Education_____

3. How do you obtain your employees?

   ____Walk-ins
   ____Employment Service
   ____Advertising
   ____Vocational/Technical Schools' Placement Offices
   ____Junior or Community College Placement Offices
   ____High School Placement Office
   ____Other

4. Do you usually contact the placement office of the local <u>vocational technical institute</u> for any potential employees to fill a job vacancy?

   ____Yes No_____

5. Do you usually contact the local <u>high school</u> counselor or placement office to fill job vacancies?

   ____Yes No_____

6. Does your firm have any problems finding qualified employees?

_____Yes (specify area) No_____

_____Office skills, secretarial
_____Technical, mechanical
_____Social service
_____Management
_____Salesmanship
_____Professional
_____Other _____

7. Do you currently have job openings that you have been unable to fill from within your organization?

_____Yes (What is the type of training required?) No_____

_____Office skills, secretarial
_____Technical, mechanical
_____Social service
_____Management
_____Salesmanship
_____Professional
_____Other_____

8. What do you think is the major problem for business and industry in the area of hiring new employees?

_____No problem
_____Not qualified
_____Want too much money
_____Economy sliding
_____Welfare system
_____Dependability/honesty
_____Lack of interest on part of employee
_____Turnover
_____Competition
_____Other (specify)
_____
_____
_____

9. How could this problem be solved?

_____No solution
_____Training program increase
_____Wage ceiling needed
_____Change society/morals
_____Other
_____Motivation
_____Change hiring practices inhouse
_____Higher wages

_____
_____

1 How would you rate--in general terms--the quality of vocational education as seen in your employees who have graduated from the Montana Vocational/ Technical Institutes?

Excellent___ Good___ Fair___ Poor___ Not Applicable____

Would you have liked to have seen more experience included in their training before starting work?

____Yes ____No

Would you have liked other types of training included in their education?

____Yes ____No

(Describe:)_____

_____

Is there any weak skill or technical area that should be strengthened by the Montana Vocational/Technical Centers? Specify: _____

_____

_____

Do the positions held by the Vocational/Technical graduates require the skill training they have had?

_____Yes
_____Not required but preferred
_____No

2 How would you rate--in general terms--the quality of the high school vocational education programs as seen in your employees who have graduated from high school and come directly to work for you?

____Excellent ____Good ____Fair ____Poor ____Not applicable

Do you feel the experience in their training was adequate____or inadequate____?

Would you have liked to have seen more experience included in their training before starting work?

____Yes ____No

Would you have liked other types of training included in their education before starting work?

____Yes ____No

Specify:_____

_____

How greatly are you influenced by the high school graduate with vocational education?

____Greatly influenced

____Moderately influenced

____Not influenced

3 How would you rate the high school graduate who has not had any vocational training in school. How prepared is he/she as to their ability to perform their work?

____Excellent ____Good ____Fair ____Poor

Would you have liked other types of skills included in their education?

____Yes ____No

(Describe:)_____

10. Would you prefer to do your own training--on the job, or otherwise--of the high school student who has not had any vocational training or would you prefer to hire a high school graduate, who has had vocational training?

____Own training _____Vocational students

11. Thinking back over the last six months, from which of the three groups of employees do you employ most frequently?

_____Post-Vocational _____High School Vocational _____Non-Vocational

12. Does your firm train personnel for purposes of promoting or advancing them?

_____Yes _____No

13. Would you rather have these people trained by a formal institution such as a college or technical school?

_____Trained in formal institution
_____Trained on the job

14. Are there specific training courses that if taught by a vocational school or college would benefit your firm?

_____Yes Please specify:

____Business Management
____Sec/Office
____Comput. Programming
____Tech/Mech
____Psych/Inter/relations
____Salesmanship
____Engineering
____Nursing
____Law Enforcement
____Other

_____No

15. Generally speaking, do you find a difference in attitude among the three groups in any of the following indicators?

	Voc/Tech Institute	High School Vocational	General Education	No Difference
__Most highly motivated	___	___	___	___
__Most highly committed to the job	___	___	___	___
__Most informed about "how the system works"	___	___	___	___
__Least amount of absenteeism	___	___	___	___
__Commitment to the "work ethic"	___	___	___	___
__Other	___	___	___	___

16. Do you find women being hired more frequently today in positions within your company that were previously filled only by men?

_____Yes _____No

(Describe:) _____

_____

17. Do you feel that the offering of vocational-related activities in the high school curriculum constitutes a valid expenditure of tax dollars going to education?

_____Yes _____No

In the vocational/technical institutes?

_____Yes _____No

APPENDIX B

DOCUMENTATION OF STUDY FINDINGS

B.1 Mean Ratings of the Quality of Vocational Education, by Comparison Group and by Program Level

B.2 Graduates' Activities Following Completion of Education, Percentage of Responses by Comparison Group

B.3 Length of Time in Gaining Employment Following Entry Into the Labor Force, Percentage of Responses by Comparison Group

B.4 Mean Ratings of Overall Education for Preparation for Employment, by Comparison Group

B.5 Mean Ratings of the Extent to Which Education Has Contributed to Graduates' Life Today, by Comparison Group

B.6 Mean Ratings of the Quality of Graduates' High School Guidance and Counseling, by Comparison Group

B.7 Employer Perceptions of the Quality of Vocational Education and Need for Additional Experience and Training, Percentage of Responses by Comparison Group

B.8 Length of Unemployment, Percentage of Responses by Comparison Group

B.9 Estimated 1976 Total Individual Income, Percentage of Responses by Comparison Group

B.10 Mean Ratings of Responses Expressing Relationships With Fellow Workers, by Comparison Group

B.11 Ratings of Characteristics of Present Job as "Excellent", Percentage of Responses by Comparison Group

B.12 Respondents' Being "Very Satisfied" With Respect to Issues Associated With "Happiness", Percentage of Responses by Comparison Group

B.13 Respondents' Being Bothered Considerably or Occasionally With Issues Associated With "Anxiety", Percentage of Responses by Comparison Group

B.14 Respondents' Agreement With Statements Relative to Locus of Control, Percentage of Responses by Comparison Group

B.15 Rating How Much of the Time Respondents Are Bored, Percentage of Responses by Comparison Group

APPENDIX B.1

Mean Ratings of the Quality of Vocational Education, by Comparison Group and by Program Level

GROUP	EVALUATION OF SECONDARY VOCATIONAL EDUCATION (Percentage of Responses)				MEAN RATINGS*
	Excellent	Good	Fair	Poor	
Postsecondary Vocational	21.0	55.0	18.4	5.7	72
Secondary Vocational	27.0	48.4	21.6	3.1	75
	EVALUATION OF POSTSECONDARY VOCATIONAL EDUCATION				
Postsecondary Vocational	36.6	48.7	12.4	2.4	80

*On a four-point scale, Excellent=4; Good=3; Fair=2; Poor=1. Mean ratings are on the basis of 100 possible. Ratings are rounded to the nearest whole number.

APPENDIX B.2

Graduates' Activities Following Completion of Education, Percentage of Responses by Comparison Group

GROUP	FULL-TIME JOB	PART-TIME JOB	COLLEGE	MILITARY	OTHER
Postsecondary	62.7	11.0	11.8	4.5	10.1
Secondary	41.2	11.1	29.5	10.6	7.6

APPENDIX B.3

Length of Time in Gaining Employment
Following Entry Into the Labor Force,
Percentage of Responses by Comparison Group

GROUP	Prior to Graduation	0-3 Months	3-6 Months	6-12 Months	12 or More Months
Postsecondary Vocational	33.0	44.0	8.0	5.0	10.0
Secondary Vocational	43.0	35.0	7.0	4.0	10.0
Academic/General	29.0	40.0	10.0	12.0	8.0

APPENDIX B.4

Mean Ratings of Overall Education
for Preparation for Employment,
by Comparison Group

GROUP	PERCENTAGE OF RESPONSES				MEAN RATINGS*
	Exceptionally Well Prepared	On the Whole, Well Prepared	Not Too Well Prepared	Very Poorly Prepared	
Postsecondary Vocational	26.7	46.7	15.8	10.8	80
Secondary Vocational	20.8	51.9	15.4	11.9	70
Academic /General	20.5	45.2	24.6	9.6	69

*On a four-point scale, Exceptionally Well Prepared=4; On the Whole, Well Prepared-3; Not Too Well Prepared=2; Very Poorly Prepared=1. Mean ratings are on the basis of 100 possible. Ratings are rounded to the nearest whole number.

APPENDIX B.5

Mean Ratings of the Extent to Which Education Has Contributed to Graduates' Life Today, by Comparison Group

GROUP	PERCENTAGE OF RESPONSES			MEAN RATINGS*
	Greatly Contributed	Moderately Contributed	Slightly Contributed	
Postsecondary Vocational	50.9	33.4	15.6	78
Secondary Vocational	46.6	42.1	11.4	78
Academic/General	52.8	26.8	18.9	77

*On a three-point scale, Greatly Contributed=3; Moderately Contributed=2; Slightly Contributed=1. Mean ratings are on the basis of 100 possible. Ratings are rounded to the nearest whole number.

APPENDIX B.6

Mean Ratings of the Quality of Graduates' High School Guidance and Counseling, by Comparison Group

GROUP	PERCENTAGE OF RESPONSES					MEAN RATINGS*
	Excellent	Good	Fair	Poor	No Contact	
Postsecondary Vocational	9.0	27.1	22.3	21.0	20.4	46
Secondary Vocational	11.3	29.2	20.1	21.5	17.5	49
Academic/General	15.7	24.4	22.8	12.6	24.4	49

*On a five-point scale, Excellent=4; Good=3; Fair=2; Poor=1; No Contact=0. Mean ratings are on the basis of 100 possible. Ratings are rounded to the nearest whole number.

64

APPENDIX B.7

Employer Perceptions of
the Quality of Vocational Education and Need
for Additional Experience and Training,
Percentage of Responses by Comparison Group

QUALITY OF EDUCATION	POSTSECONDARY VOCATIONAL (N=33)	SECONDARY VOCATIONAL (N=18)	ACADEMIC /GENERAL (N=24)
Excellent	15.0	11.0	0.0
Good	67.0	22.0	20.0
Fair	15.0	44.0	50.0
Poor	3.0	22.0	30.0
Mean Rating*	=74	=55	=48
ADDITIONAL EXPERIENCE NEEDED PRIOR TO START OF WORK?			
Yes	70.0	78.0	46.0
No	24.0	6.0	13.0
No Response	6.0	16.0	41.0
ADDITIONAL TYPES OF TRAINING INCLUDED IN THEIR EDUCATION?			
Yes	27.0	44.0	
No	24.0	28.0	
No Response	49.0	28.0	

*On a four-point scale, Excellent=4; Good=3; Fair=2; Poor=1. Mean ratings are on the basis of 100 possible. Ratings are rounded to the nearest whole number.

APPENDIX B.8

Length of Unemployment,
Percentage of Responses by Comparison Group

GROUP	0-6 Months	6-12 Months	1-2 Years	2-3 Years
Postsecondary Vocational	61.0	10.0	15.0	14.0
Secondary Vocational	70.0	10.0	10.0	10.0
Academic/General	57.0	17.0	11.0	15.0

APPENDIX B.9

Estimated 1976 Total Individual Income,
Percentage of Responses by Comparison Group

INCOME	G R O U P		
	Postsecondary Vocational	Secondary Vocational	Academic/General
Less than $5,000	26.0	30.0	34.0
$5,000 - $9,000	41.0	37.0	38.0
$10,000 - $14,999	23.0	24.0	21.0
$15,000 - $19,999	5.0	5.0	4.0
$20,000 - $24,999	3.0	2.0	1.0
$25,000 - or more	2.0	2.0	2.0

APPENDIX B.10

Mean Ratings of Responses
Expressing Relationships With Fellow Workers,
by Comparison Group

GROUP	PERCENTAGE OF RESPONSES						MEAN RATINGS*
	No Response	Free to Speak, Including to Management	Free to Speak to All Workers	Free to Speak to Some	Speak When Spoken To	Never Free to Speak	
Postsecondary Vocational	7.0	59.2	12.7	11.3	7.0	2.8	80
Secondary Vocational	5.5	52.5	19.1	16.9	2.7	3.3	80
Academic /General	2.7	53.3	21.7	14.1	6.5	1.7	82

* On a five-point scale, "Feel free and do speak openly to all fellow workers, including management"=5; "Feel free and do speak openly to all fellow workers"=4; "Feel free and do speak openly to more than one other fellow worker"=3; "Speak freely only when spoken to"=2; "Never really feel free to speak"=1. Mean ratings are on the basis of 100 possible. Ratings are rounded to the nearest whole number.

APPENDIX B.11

Ratings of Characteristics
of Present Job as "Excellent",
Percentage of Responses by Comparison Group

JOB CHARACTERISTICS	G R O U P		
	Postsecondary Vocational	Secondary Vocational	Academic /General
Good income to start	12.0	12.0	9.0
Good income expected within a few years	13.0	17.0	9.0
Equal pay for equal work	20.0	22.0	20.0
Good fringe benefits	25.0	23.0	21.0
Choice and length of vacations	19.0	19.0	21.0
Allows leisure and family time	27.0	30.0	27.0
An understanding supervisor	39.0	36.0	38.0
Friendly co-workers	32.0	29.0	38.0
Job with status	9.0	7.0	11.0
Working in pleasant surroundings	22.0	22.0	20.0
Freedom from prejudice	33.0	32.0	25.0
Challenging work	28.0	29.0	42.0
Work I feel I do well	37.0	34.0	41.0
Work in the area in which I specialized	24.0	24.0	27.0
Freedom to make own decisions	25.0	19.0	23.0
Expand my skills and abilities	26.0	22.0	28.0
Opportunity for advancement	9.0	15.0	7.0
Job security and permanence	24.0	26.0	30.0
Important and worthwhile work	23.0	27.0	34.0

APPENDIX B.12

Respondents' Being "Very Satisfied"
With Respect to Issues Associated With "Happiness",
Percentage of Responses by Comparison Group

ISSUES Associated With "Happiness"	GROUP Postsecondary Vocational	Secondary Vocational	Academic /General
Health and well-being	46.0	54.0	51.0
Being loved	60.0	60.0	59.0
Expanding one's abilities	32.0	28.0	28.0
Understanding self & one's role in life	25.0	27.0	27.0
Being in love	56.0	58.0	54.0
Marriage	43.0	45.0	48.0
Job or primary activity	31.0	38.0	41.0
Exercise and active recreation	26.0	31.0	27.0
Having children and being a parent	30.0	28.0	27.0
Helping others	28.0	33.0	28.0
Friends and social life	37.0	40.0	37.0
Body and physical attractiveness	25.0	26.0	24.0
Sex life	44.0	44.0	44.0
Living quarters	44.0	38.0	44.0
Religion	20.0	25.0	25.0
Financial situation & material comforts	22.0	23.0	28.0
Passive recreation	29.0	24.0	23.0
Neighborhood	32.0	31.0	31.0
Recognition, success	21.0	25.0	25.0
Community affairs and politics	18.0	13.0	20.0

APPENDIX B.13

Respondents' Being Bothered Considerably or Occasionally With Issues Associated With "Anxiety", Percentage of Responses by Comparison Group

ISSUES Associated With "Anxiety"	GROUP		
	Postsecondary Vocational	Secondary Vocational	Academic /General
Money problems	77.8	78.5	74.0
Physical health	41.0	34.3	46.0
Drugs and/or alcohol	10.0	11.3	6.0
Depression	47.2	42.3	44.0
Loneliness	38.4	39.5	36.0
Thoughts about the future	68.2	73.8	71.0
Feelings of wanting more out of life	68.8	68.8	61.0

APPENDIX B.14

Respondents' Agreement With Statements
Relative to Locus of Control,
Percentage of Responses by Comparison Group

STATEMENTS Reflecting Locus of Control	GROUP		
	Postsecondary Vocational	Secondary Vocational	Academic /General
Internal Control			
Positive attitude toward self	81.8	84.3	74.7
Person of worth	92.0	90.7	91.5
Does things well	87.7	92.5	95.7
Satisfied with self	84.0	84.1	83.1
External Control			
Luck is more important than hard work	12.7	5.9	8.5
Something or someone stops me	12.3	18.3	5.6
Planning makes one unhappy	12.8	9.8	7.0
Accepts condition in life	14.1	19.1	15.5

APPENDIX B.15

Rating How Much of the Time Respondents Are Bored,
Percentage of Responses by Comparison Group

GROUP	HOW MUCH OF THE TIME RESPONDENT IS BORED					
	Most of the Time	Every Day	A Few Times A Week	Weekly	Monthly	Almost Never
Postsecondary Vocational	1.6	1.6	27.2	10.9	21.2	32.1
Secondary Vocational	2.7	1.6	26.8	13.1	14.8	37.2
Academic/General	0.0	2.8	23.9	9.9	15.5	43.7